

## CHECKLIST TO DESIGNATE AREAS OF EVALUATION FOR REQUESTS FOR PROPOSAL (RFP)

PROJECT MANAGER			JOB NUMBER (JN)	CONTROL SECTION (CS)
DESCRIPTION IF NO JN/CS				
<b>MDOT PROJECT MANAGER:</b> Check all items to be included in RFP.  WHITE = REQUIRED GRAY SHADING = OPTIONAL  Check the appropriate Tier in the box below			<b>CONSULTANT:</b> Provide only checked items below in proposal.	
<b>TIER I</b> <b>(\$25,000-\$99,999)</b>	<b>TIER II</b> <b>(\$100,000-\$250,000)</b>	<b>TIER III</b> <b>(&gt;\$250,000)</b>		
			Understanding of Service	
			<i>Innovations</i>	
			<i>Safety Program</i>	
N/A			Organization Chart	
			Qualifications of Team	
			Past Performance	
Not required as part of official RFP	Not required as part of official RFP		Quality Assurance/Quality Control	
			Location of Service Personnel <b>(Only check for on-site inspection services)</b>	
N/A	N/A		Presentation	
N/A	N/A		Technical Proposal (if Presentation is required)	
3 pages including cover sheet <b>(No Resumes)</b>	7 pages	19 pages	Total maximum pages for RFP <b>not including key personnel resumes</b>	

**BUREAU OF HIGHWAYS  
REQUEST FOR PROPOSAL  
for  
QUALIFICATIONS BASED SELECTION FOR PREQUALIFIED SERVICES**

The Michigan Department of Transportation (MDOT) is seeking professional services for the project contained in the attached scope of services.

If your firm is currently prequalified for this type of work and you are interested in providing services, please indicate your interest by submitting a Proposal. The Proposal must be submitted in accordance with the latest "Vendor Selection Guidelines for Service Contracts", available on the MDOT website.

For efficiency sake, we are asking that the vendor firm provide **5** paper copies of the Proposal to the MDOT project manager named in the attached scope of services.

Mark Sweeney, P.E.  
18101 West Nine Mile Road  
Southfield, MI 48075  
sweeneym@michigan.gov

These copies must be received by **May 26th, 2006 no later than 4:00 p.m.** Fax and electronic copies are not acceptable.

In addition, provide one unbound copy to:

Regular Mail:  
Secretary, Operations Contract Support  
Michigan Department of Transportation  
P.O. Box 30050  
Lansing, MI 48909

OR

Overnight Mail:  
Secretary, Operations Contract Support  
Michigan Department of Transportation  
425 W. Ottawa  
Lansing, MI 48933

This copy is to be received within three working days after the due date and time specified above. Please do not deliver in person.

Any questions relative to the scope of services must be submitted by e-mail to the MDOT project manager. Any questions must be asked at least three working days prior to the due date and time specified above. All questions and their answers will be placed on the MDOT website as soon as

possible after receipt of the questions. The names of vendors submitting questions will not be disclosed.

For a cost plus fixed fee contract, the selected vendor must have a cost accounting system to support a cost plus fixed fee contract. This type of system has a job-order cost accounting system for the recording and accumulation of costs incurred under its contracts. Each project is assigned a job number so that costs may be segregated and accumulated in the vendor's job-order accounting system.

The selection team will review the information submitted and will select the firm considered most qualified to perform the engineering services based on the proposals. The selected vendor will be contacted to confirm capacity. Upon confirmation, that firm will be asked to prepare a priced proposal. Negotiations will be conducted with the firm selected.

**The maximum allowable pages for the proposal are limited to the selected Tier shown on MDOT Form 5100B, which is posted with this RFP. Page limits apply to the entire proposal. The number of pages per section is the decision of the creator of the proposal. Include in proposal only those items that are checked by the MDOT project manager on form 5100B.**

MDOT is an equal opportunity employer and MDOT DBE firms are encouraged to apply. The participating DBE firm, as currently certified by MDOT's Office of Equal Opportunity, shall be listed in the Proposal.

The scope of services is attached to this solicitation.

**Michigan Department of Transportation**

**SCOPE OF SERVICES  
FOR  
DESIGN SERVICES**

**CONTROL SECTION:** CS 82112 & 82111

**JOB NUMBER:** 75229C & 45682C

**DESCRIPTION OF WORK:** Roadway Rehabilitation

**LOCATION:** The project is located along M-10, between Greenfield Road and Meyers Road, in the City of Detroit, Wayne County. The project length is approximately 2.2 miles.

**I Primary Prequalification Classification:**

Complex Urban Freeway Design

**II Secondary Prequalification Classification:**

Specialty Walls and Slopes  
Municipal Utilities  
Road Design Surveys  
Maintaining Traffic Plans & Provisions  
Pavement Marking Plans  
Permanent Freeway Traffic Signing Plans  
Traffic Signal Design  
Traffic Operations Studies  
Utility Coordination

The anticipated start date of the service is July 24, 2006.

The anticipated completion date for the service is October 1, 2007.

DBE Requirement: 10%

Send Proposals to:

**Mark A. Sweeney – Project Manager  
MDOT – Metro Region Office  
18101 West Nine Mile Road  
Southfield, Michigan 48075**

**I. SCOPE OF CONSULTANT DUTIES**

Complete the design of this project including, but not limited to the following:

- A. Perform design surveys. **Please know that a design survey for this project has already been performed.** This task has been included should additional survey information be required.
- B. Prepare a drainage study and related design.
- C. Prepare required plans, typical cross-sections, details, and specifications required for design and construction.
- D. Compute and verify all plan quantities.
- E. Prepare staging plans and special provisions for maintaining traffic during construction.
- F. Prepare pavement marking plans and special provisions.
- G. Prepare traffic signal plans and special provisions.
- H. Prepare permanent signing plans and special provisions for freeway sign upgrading.
- I. Prepare Municipal Utility plans and special provisions (to include public water, lighting (PLD) and sanitary services).
- J. Provide base sheets to the MDOT Electrical Unit, and incorporate their plans, special provisions and details into the project as appropriate.
- K. Provide base sheets to the MDOT MITS Center. Receive MDOT's mark-up drawings, pay items and special provisions, and prepare necessary MITS plans as appropriate. The Consultant will be responsible for all CADD and SAPW work.
- L. Perform a Crash Analysis and Safety Review for this project. (See Attachment E).
- M. Prepare the accident analysis report for this project. A separate report may be required for the roadway, for each of the structure location, and, for each of the design elements included within the design exception requests.
- N. Prepare a capacity analysis, as well as provide user costs.

- O. Perform Utility Coordination for the project (See Attachment D).
- P. Coordinate with the additional construction projects along M-10 from Lahser Road to Greenfield Road and Greenfield Road to Jefferson Avenue. Construction of these sections of M-10 may run concurrently or consecutively.
- Q. Provide solutions to any unique problems that may arise during the design of the project.
- R. The Consultant may be required to provide Design Services during the construction phase of this project. If Construction Assistance is required, then a separate authorization for those services will be issued.

### **III. PROJECT DESCRIPTION**

This project consists of all work related to designing this reconstruction project, including but not limited to the following:

- A. Perform grading and earthwork.
- B. Reconstruct the road as per the MDOT Pavement Design.
- C. Perform shoulder upgrades, as is required.
- D. Upgrade geometrics to current standards
- E. Perform crown and superelevation modifications.
- F. Upgrade existing underclearances.
- G. Incorporate electrical plans and special provisions (Designed by MDOT).
- H. Prepare MITS plans.
- I. Adjust and upgrade the existing drainage system.
- J. Adjust and replace existing signs.
- K. Adjust and upgrade signals.
- L. Perform guardrail upgrades or design, as is required.
- M. Clean existing drainage structures and drainage structure leads, as is required
- N. Install, if not already present, sidewalk ramp terminals at all sidewalk street intersection locations.

**Work shall conform to current MDOT, FHWA, and AASHTO practices, guidelines, policies, and standards (i.e., Road Design Manual, Standard Plans, Roadside Design Guide, A Policy on Geometric Design of Highways and Streets, Michigan Manual of Uniform Traffic Control Devices, etc.).**

#### **IV. PROJECT CONSTRUCTION COST**

A. The estimated cost of construction is:

Roadway Rehabilitation (JN 45682C)      Programmed Cost:    \$17,000,000

**CONSTRUCTION TOTAL    \$17,000,000**

The above construction total is the amount of funding programmed for this project. The Consultant is expected to design the project within the programmed amount.

**If at any time the estimated cost of construction varies by more than 5% of the current programmed amount, then the Consultant will be required to submit a letter justifying the changes in the construction cost estimate.**

#### **V. PROJECT SCHEDULE**

The scheduled Consultant's plan completion date for this project is to be no later than April 6, 2007. The Consultant shall present options to the Region for expediting the design of this project for the earliest possible letting date. The Consultant shall use the following events to prepare the proposed implementation schedule as required in the Guidelines for the Preparation of Responses on Assigned Design Services Contracts. These dates shall be used in preparing the Consultant's Monthly Progress Reports.

<u>Target</u>		
<u>Date</u>	<u>Task #</u>	<u>Description</u>
	3330	Conduct Design Survey Submit Survey Final Deliverables
	3360	Prepare Base Plans Submit Base Plans
	3380	Review Base Plans (by MDOT)
	3390	Develop the Construction Zone Traffic Control Concepts
	3522	Conduct Drainage Study, Storm Sewer Design, and Structural Best Management Practices (BMP) Submit Plans for Utility Review (approximately 50% complete) Submit Environmental Permit Information (6 months prior to the Plan Completion Date)
	3540	Develop Construction Zone Traffic Control Plan
	3551	Perform/Review Traffic Signal Operations Plan
	3552	Develop Preliminary Permanent Pavement Marking Plan
	3554	Develop Preliminary Freeway Signing Plan
	3580	Develop Preliminary Plans Submit Preliminary Plans
	3590	Review Preliminary Plans (The Plan Review) (by MDOT)
	3670	Develop Municipal Utility Plans (impacted by road work)
	3675	Develop Electrical Plans (existing electrical impacted by project)

	3680	Obtain Required Municipal Utility Permits (impacted by road work)
	3821	Complete/Review Traffic Signal Plans
	3822	Complete Permanent Pavement Marking Plan
	3824	Complete Freeway Signing Plan
	3830	Complete the Construction Zone Traffic Control Plan
	3840	Develop Final Plans and Specifications
2/23/07		Submit Final Plan/Proposal Package to MDOT for final review
	3870	Hold Omissions/Errors Check (OEC) Meeting
3/23/07		Omissions/Errors Check (OEC) Meeting (approximate date)
4/6/07		Consultant's Plan Completion: Final Construction Plan/Proposal package with recommendations incorporated to MDOT (two weeks after OEC Meeting)
10/7/07		Final Deliverables to MDOT

## **VI. PAYMENT SCHEDULE**

Compensation for this Scope of Design Services shall be on an actual cost plus fixed fee basis.

## **VII. MONTHLY PROGRESS REPORT**

On the first of each month, the Consultant Project Manager shall submit a monthly project progress report to **Mark Sweeney**, Project Manager, or **Katie Noggle**, the Road Consultant Coordinator. The monthly progress report shall follow the guidelines in Attachment H.

## **VIII. FORMAT**

The Consultant shall deliver all computer files associated with the project in their native format (spreadsheets, CADD files, GEOPAK files, etc.) on DVD, CD and/or uploaded to ProjectWise, as directed by the MDOT Project Manager. All CADD/GEOPAK files shall be created and identified with standard MDOT file names as shown in Appendix A of the Road Design Manual. It is the Consultant's responsibility to obtain up to date Microstation (V8) and GEOPAK seed/configuration files necessary to comply with MDOT's CADD standards which are posted to the bulletin system. When the use of GEOPAK road design software is necessary to develop plans all pay items shall be placed into the CADD file using GEOPAK's Design and Computation Manager so that Quantity Manager can be used to transfer pay item information to SAPW/Trns\*port. Any CADD/GEOPAK files that do not conform to MDOT standards will be returned to the Consultant for correction at the Consultant's expense.

Proposal documents shall be submitted both in their native format with standard naming conventions and as individual Adobe PDF files. To provide text search capabilities, the PDF files shall be created by converting the native electronic files to PDF. Scanning to PDF is discouraged except in instances when it is necessary to capture a legally signed document or when a hard copy version of the document is all that exists.



Plan files shall be submitted both in their native .dgn format with standard naming conventions and plotted into a combined Adobe PDF file. Plan sheets shall be plotted to Adobe PDF with full text search and level on/off capabilities in both scalable full size (24" x 36") and scalable half size (11" x 17") formats including plan sheets and profile sheets will be required. The project will require a ratio (scale) of 1:40; scale and layout of sheets to be discussed with the Road Consultant Coordinator.

A half size title sheet shall be plotted, stamped, and signed, then scanned for inclusion with the Adobe PDF set. The original title sheet shall be sent to the MDOT Project Manager.

Stand Alone Proposal Estimator's Worksheet (SAPW) shall be used to generate the .txt and .csv files necessary for import into the Trns\*port bid letting software. The SAPW files shall be transmitted electronically by the method specified by the MDOT Project Manager.

Other plan sheets that are required for this project shall be completed by the Consultant. These include, but are not limited to the following plan sheets:

- A. The title sheet. MDOT will provide a map of the area on a disk in our workstation format. If the map is not available, MDOT will provide a map that could be used. The Consultant shall be responsible for any revisions to the title sheet and the title sheet and map shall meet MDOT format and layout guidelines.
- B. Note Sheet.
- C. Typical Cross-Sections.
- D. Project-specific Special Details.
- E. Construction staging and traffic control plans.
- F. Detail grade sheets for major intersections, ramp gores and critical areas.
- G. Paving details.
- H. Pavement marking plan(s).
- I. Culvert detail sheet(s).
- J. Vicinity and drainage map sheet.
- K. Alignment sheet.
- L. Witness and benchmark sheet(s).
- M. Soil boring log sheet(s).

All plans, special provisions, estimates, and other project related items shall meet all MDOT requirements and detailing practices (i.e., format, materials, symbols, patterns, and layout) or as otherwise directed by the Project Manager.

All plans, specifications, and other project related items are subject to review and approval by MDOT.

## **IX. UTILITIES**

The Consultant shall be responsible for obtaining and showing on the plans the location and names of all existing utilities within the limits of the project. In the course of resolving utility conflicts, the Consultant shall make modifications to the plans or design details and provide assistance as directed by the MDOT Utility Permits Engineer and/or Project Manager. The Consultant shall attend any utility meetings called to ensure that the concerns are addressed on the plans involving utilities. The Consultant shall assist in the review of utility permit requests to ensure compatibility with the project. In addition, the Consultant is responsible for the tasks detailed in Attachment D.

## **X. TRAFFIC CONTROL AND MDOT PERMITS**

The Consultant shall be responsible for all traffic control required to perform the tasks as outlined in this Project Scope of Design Services.

The Consultant shall be responsible for obtaining up-to-date access permits and pertinent information for tasks in MDOT Right-Of-Way (ROW). This information can be obtained through Pam Sebenick, Utilities/Permits Section, Real Estate Division at (517) 373-7680.

## **XI. PRE-QUALIFICATION AND SUBCONTRACTING OF CONTRACT WORK**

Any task(s) for which the Consultant is not prequalified must be completed by a Subcontractor that is pre-qualified for that task(s). Any questions regarding prequalification should be directed to Phil Brooks, Prequalification Manager, at (517) 335-2514.

The Department's prequalification is not a guarantee or warranty of the subcontractors' ability to perform or complete the work subcontracted. The Consultant remains fully responsible to the Department for completion of the work according to the contract as if no portion of it had been subcontracted.

All subcontractor communications with the Department shall be through the Consultant to the MDOT Project Manager. This requirement may be waived if a written communication plan is approved by the MDOT Project Manager.

The Department may direct the immediate removal of any subcontractor working in violation of this subsection. Any costs or damages incurred are assumed by the Consultant by acceptance of the contract. It is further understood that the Consultant's responsibilities in the performance of

the contract, in case of an approved subcontract, are the same as if the Consultant had handled the work with the Consultant's own organization.

## **XII. CONSULTANT RESPONSIBILITIES :**

1. Meet with the MDOT Project Manager to review project, location of data sources and contact persons, and review relevant MDOT operations. The Consultant shall review and clarify project issues, data needs and availability, and the sequence of events and team meetings that are essential to complete the design by the project plan completion date. Attention shall be given to critical target dates that may require a large lead time, such as geotechnical requirements, ROW submittal dates, Railroad coordination requirements, utility conflict resolution, local agency meetings, etc.
2. Maintain a Design Project Record which includes a history of significant events (changes, comments, etc.) which influenced the development of the plans, dates of submittals and receipt of information.
3. **P/PMS TASK 3330 - CONDUCT DESIGN SURVEY**  
Perform surveys as necessary to design this project (See Attachment A). The Consultant's survey shall be as complete and accurate as necessary to:
  1. Calculate and verify plan quantities to the Consultant's standards.
  2. Locate and lay out the future construction of this project.
  3. Perpetuate affected property controlling corners for monument preservation.As part of the design proposal, the Consultant shall present a detailed survey work plan for review, evaluation and acceptance by the MDOT Project Manager. A final survey report for review and approval by the MDOT Survey Unit is required. Acceptance of the survey by MDOT Design Survey does not in any way relieve the Consultant of responsibility and liability for the content of the survey.
4. There shall be a preliminary survey review to this project. This review shall be for horizontal and vertical control. The Consultant shall provide copies of all field work notes as well as least square adjustment analysis to the MDOT Project Manager as soon as it is available.
5. The Consultant will be responsible for providing elevation view sketches at both sides of each and every bridge in the project area. The sketch must show the elevation of the roadway at 2 feet inside of the inside edge of metal and 2 feet outside of the outside edge of metal, as well as the interior lane lines, crown point, and shoulder edges. The corresponding elevation of the structure underclearance immediately overhead must also be shown. Both directions of M-10 will be handled separately and similarly, as will the cross roads. All underclearance sketches must be shown looking up station.
6. **P/PMS TASK 3360 - PREPARE BASE PLANS**  
See Consultant Manual Attachment I for details.
7. **P/PMS TASK 3380 – REVIEW BASE PLANS (BY MDOT)**

See Consultant Manual Attachment I for details.

8. **DRAINAGE STUDY**

Perform and Drainage Study, see Attachment “E” for details

9. **P/PMS TASK 3390 - DEVELOP THE CONSTRUCTION ZONE TRAFFIC CONTROL CONCEPTS**

See Consultant Manual Attachment I for details.

10. Perform storm sewer design calculations, including appropriate outlets and energy dissipation if necessary, as outlined in the MDOT Drainage Manual. Detention may be required. Detention pond design must meet, but is not limited to, local agency storm water regulations and Michigan Department of Environmental Quality water quality permit requirements. Submit all design calculations, drainage maps, and proposed profiles to the MDOT Project Manager for review prior to the Plan Review.

11. The Consultant shall identify the locations of any water main and/or sanitary sewer on the project.

12. If water mains and/or sanitary sewers are present within the project limits, the Consultant shall evaluate the necessity for the relocation of water mains and sanitary sewers, in accordance with Design Division’s Informational Memorandum #441B and #402R dated April 13, 1992. The Consultant shall submit a report to Steven J. Urda, Design Engineer - Municipal Utilities, Design Division for review and concurrence. A copy of the report shall be sent to the Project Manager. **If relocation is necessary and water main and/or sanitary sewer work is not part of the Scope of Work, contact the MDOT Project Manager immediately.**

13. **P/PMS TASK 3540 - DEVELOP CONSTRUCTION ZONE TRAFFIC CONTROL PLAN**

See Consultant Manual Attachment I for details.

14. **P/PMS TASK 3551 - PERFORM/REVIEW PRELIMINARY TRAFFIC SIGNAL OPERATIONS PLAN**

See Consultant Manual Attachment I for details.

15. **P/PMS TASK 3552 - DEVELOP PRELIMINARY PERMANENT PAVEMENT MARKING PLAN**

See Consultant Manual Attachment I for details.

16. **P/PMS TASK 3554 - DEVELOP PRELIMINARY FREEWAY SIGNING PLAN**

See Consultant Manual Attachment I for details.

17. **P/PMS TASK 3580 - DEVELOP PRELIMINARY PLANS**

See Consultant Manual Attachment I for details.

18. **P/PMS TASK 3590 - REVIEW PRELIMINARY PLANS (THE PLAN REVIEW) (BY MDOT)**  
See Consultant Manual Attachment I for details.
19. **P/PMS TASK 3670 - DEVELOP MUNICIPAL UTILITY PLANS (impacted by road work)**  
See Consultant Manual Attachment I for details.
20. **P/PMS TASK 3675 - DEVELOP ELECTRICAL PLANS (impacted by road work)**  
See Consultant Manual Attachment I for details.
21. **P/PMS TASK 3680 – OBTAIN REQUIRED MUNICIPAL UTILITY PERMITS (impacted by road work)**  
See Consultant Manual Attachment I for details.
22. **P/PMS TASK 3821 - COMPLETE/REVIEW TRAFFIC SIGNAL PLANS**  
See Consultant Manual Attachment I for details.
23. **P/PMS TASK 3822 - COMPLETE PERMANENT PAVEMENT MARKING PLAN**  
See Consultant Manual Attachment I for details.
24. **P/PMS TASK 3824 – COMPLETE FREEWAY SIGNING PLAN**  
See Consultant Manual Attachment I for details.
25. **P/PMS TASK 3830 - COMPLETE THE CONSTRUCTION ZONE TRAFFIC CONTROL PLAN**  
See Consultant Manual Attachment I for details.
26. **P/PMS TASK 3840 - DEVELOP FINAL PLANS AND SPECIFICATIONS**  
See Consultant Manual Attachment I for details.
27. **P/PMS TASK 3870 - HOLD OMISSIONS/ERRORS CHECK (OEC) MEETING**  
See Consultant Manual Attachment I for details.  
The interval for plotting cross-sections and developing the grade book shall be 50 feet.  
The intervals for critical areas shall be 25 feet.
28. **P/PMS TASK 5010 - CONSTRUCTION PHASE ENGINEERING AND ASSISTANCE**  
The Consultant may be required to provide Design Services during the construction phase of this project. If Construction Assistance is required, then a separate authorization for those services will be issued.
29. If excavation is required, submit the excavation locations which may contain contamination. The Project Manager can then proceed in requesting a Preliminary Project Assessment (PPA).

30. The Consultant shall be required to prepare and submit a CPM network for the construction of this project. See Attachment G for details.
31. **CRASH ANALYSIS:** Perform a crash analysis and determine the recommended countermeasures, (See Attachment E for details) This shall include, but shall not be limited to, performing the crash analysis, which shall include the last 3 years of reliable data for the analysis period. If there has been a fatality within those 3 years, then the analysis shall incorporate the last 7 years of reliable data. The Consultant will be furnished 3 years of data. If 7 years of data is required, the Consultant shall request, in writing, the additional crash data from the MDOT Project Manager (requests may take up to two weeks from the date the request is received to fill).
32. Determine countermeasures based on the crash analysis and provide a detail drawing explaining each recommendation. Determine the construction cost estimate for each countermeasure using MDOT Pay Items. Summarize the countermeasures for each crash pattern individually.
33. Review and document the roadside safety related items (i.e. guardrail, barriers, attenuators, etc.) which need to be modified or included in the project. Documentation to include location, existing type and condition, and the recommended treatment.
34. **DRAINAGE STUDY.** Perform drainage study. See Attachment F for details.
35. The Consultant representative shall record and submit type-written minutes for all project related meetings to the MDOT Project Manager within two weeks of the meeting. The Consultant shall also distribute the minutes to all meeting attendees. MDOT will provide and distribute official meeting minutes for the Base Plan Review Meeting (if meeting necessary) and The Plan Review Meeting.
36. Attend information meetings (i.e., public hearings, open houses, etc.) with the public and public officials to assist in responding to concerns and questions. May require the preparation of displays such as maps, marked-up plans, etc.
37. Prepare and submit any information, calculations, hydraulic studies, or drawings required by MDOT for acquiring any permit (i.e. NPDES, DEQ, etc), approvals (i.e. county drain commission) and related mitigation. MDOT will submit permit requests.
38. Attend any project-related meetings as directed by the MDOT Project Manager.
39. **UTILITY COORDINATION.** Perform the Utility Coordination for the project (See Attachment "D" for details).
40. The Consultant shall assist in the review of driveway and utility permit requests, incorporate the information in the design plans, and respond within 2 weeks from receipt of the permit.

41. The MDOT Project Manager shall be the official MDOT contact person for the Consultant **and shall be made aware of all communications regarding this project.** The Consultant must either address or send a copy of all correspondence to the MDOT Project Manager. This includes all Subcontractor correspondence and verbal contact records.
42. The Consultant shall contact the MDOT Project Manager whenever discoveries or design alternatives have the potential to require changes in the scope, limits, quantities, costs, or Right-Of-Way of the project.
43. Submit all design files electronically at all submittals.

## **XII. MDOT RESPONSIBILITIES :**

- A. Schedule and/or conduct the following:
  1. Project related meetings
  2. The Plan Review
  3. Utility Meetings (see Attachment D)
  4. Quantity summary sheets and final item cost estimates
  5. Packaging of plans and proposal
- B. Furnish Special Details and pertinent reference materials.
- C. Furnish prints of an example of a similar project and old plans in the area, if available.
- D. Supply information on existing pavement structure as necessary.
- E. Coordinate any necessary utility relocation(s). (see Attachment D)
- F. Furnish pavement core information (Consultant shall place information on plan sheets).
- G. Furnish soil boring information as necessary (Consultant shall place information on plan sheets).
- H. Pavement design.
- I. Furnish diskette of file and instructions for the MDOT Stand Alone Estimator's Worksheet (SAEW).

## **XII. CONSULTANT PAYMENT**

All invoices/bills for services must be directed to the Department and follow the 'then current' guidelines. The latest copy of the "Professional Engineering Service Reimbursement Guidelines for Bureau of Highways" is available on MDOT's Bulletin Board System. This document contains instructions and forms that must be followed and used for invoicing/billing; payment may be delayed or decreased if the instructions are not followed.

Payment to the Consultant for Services rendered shall not exceed the "Cost Plus Fixed Fee Not to Exceed Maximum Amount" unless an increase is approved in accordance with the contract with the Consultant. All invoices/bills must be submitted within 14 calendar days of the last date of services being performed for that invoice.

Direct expenses will not be paid in excess of that allowed by the Department for its own employees. Supporting documentation must be submitted, with the invoice/bill, for all billable expenses on the Project. The only hours that will be considered allowable charges for this contract are those that are directly attributable to the activities of this Project. Hours spent in administrative, clerical, or accounting roles for billing and support, are not considered allowable hours; there will be no reimbursement for these hours.

**“Overtime hours” are limited to time spent on the same project by the same person after 40 hours of straight time, in a Sunday through Saturday week (not other combinations).**



## ATTACHMENT A

### CS 82112 - JN 75229C & CS 82111 – JN 45682C M-10 from Greenfield Road to Meyers Road City of Detroit Wayne County

#### SURVEY SCOPE OF WORK

Survey Limits: As needed for Design, Right-Of-Way, and Construction

**NOTES:** The Consultant shall discuss the scope of this survey with an MDOT Region Surveyor or Lansing Design Support Area Surveyor before submitting a proposal.

The Consultant surveyor must contact the Region or TSC Traffic and Safety Engineer for work restrictions in the project area prior to submitting a proposal.

A **detailed Survey Work Plan** with a **spreadsheet estimate** of hours by specific survey task such as traversing, leveling, mapping, etc. **must** be included in the project proposal.

It is the responsibility of the Professional Surveyor to safeguard all corners of the United States Public Land Survey System, published Geodetic Control and any other Property Controlling corners that may be in danger of being destroyed by the proposed construction project.

#### **GENERAL REQUIREMENTS:**

1. Surveys must comply with **all Michigan law** relative to land surveying.
2. Surveys must be done under the **direct supervision** of a Professional Surveyor licensed to practice in the State of Michigan.
3. Work in any of the following categories of survey: Road Design, Bridge, Hydraulic, Right-of-Way, and/or Ground Control (Photogrammetric) must be completed by a survey firm which is pre-qualified by MDOT.
4. Surveys must meet all requirements of the Michigan Department of Transportation (MDOT) Design Surveys *Standards of Practice* dated April 1, 1998. Please contact the Design Survey office to clarify any specific questions regarding these standards.
5. Consultants must obtain all necessary permits required to perform this survey on any public and/or private property, including an up-to-date permit from the MDOT Utilities Coordination and Permits Section.
6. The Consultant must contact any and all Railroads prior to commencing field survey on railroad property. The cost for any permit, flaggers and/or training that is required by the

Railroad will be considered as a direct cost, but only if included in the Consultant's proposal.

7. The Consultant must adhere to all applicable OSHA and MIOSHA safety standards, including the appropriate traffic signs for the activities and conditions for this job.
8. Consultants are responsible for a comprehensive and conscientious research of all records, including MDOT records, essential for the completion of this project.
9. Measurements, stationing, recorded data, and computations must be in international feet, unless specified otherwise by the Project Manager.
10. It is appropriate to utilize the same horizontal and vertical datums used in recent and/or future projects in the "corridor." Otherwise, coordinate values shall be based upon the Michigan State Plane coordinate system NAD83 if available within four miles. If not, a local project coordinate control system is acceptable. All elevations must be based upon the North American Vertical Datum of 1988 (NAVD88) if control is available within four miles. If not, existing MDOT plan datum is acceptable. **Other datums must be approved by the MDOT Design Division, Supervising Land Surveyor.** A preliminary submittal of the adjusted Horizontal and Vertical control for the project may be submitted to the MDOT Survey Consultant Coordinator or Region Surveyor for review and acceptance as soon as it is available.
11. The survey notes must be submitted to the Design Survey Unit in 10" by 12" divided portfolios with flap covers. As many portfolios should be used as are needed to contain all of the required documents and Compact Discs (CD's). **Duplicate CD's must be included in the portfolio, with one set labeled "Region Surveyor".**
12. Each portfolio must be labeled on the outside as in the following example:

Survey Notes for:

Route, Location and Project Limits [I-94 under Beaubien Street]

Control Section [S06 of 82024] Job Number [45197D] Date [of submittal]

By [Name of Firm]

Michigan Professional Surveyor [ ]

License # [ ]

13. Each submittal is to be divided into five sections. These sections are to be labeled as follows: **Administrative, Alignment, Control, Property, Mapping, and Miscellaneous.**
  - a. The Administrative section will include the following items: a completed copy of the MDOT Form 222(3/99) entitled "SURVEY NOTES: RECEIPT AND TRANSMITTAL"; the limits of the survey and original survey scope as determined by the Consultant Surveyor and Design Engineer; a complete synopsis of the survey **that shall include, but not be limited to** horizontal and vertical control datums used; methodology; a complete discussion of government corners recovered, perpetuated or otherwise used as part of the survey; problems encountered; and a statement from the Consultant surveyor supervising

the project certifying compliance with Michigan Department of Transportation (MDOT) Design Surveys *Standards of Practice* dated April 1, 1998; as well as documentation of all project specific meetings and /or conversations with MDOT Survey personnel.

- b. The Alignment section will contain a sketch and/or drawing of the alignment, witnesses and stationing of alignment points set or found; an explanation of how the alignment was determined, whether best fit or legal; and all supporting documentation. The alignment data must be submitted both hardcopy and electronically.
  - c. The Control section must contain the data collected and copies of all research documents used to establish the **horizontal and vertical** reference systems for the project, and must include a thorough written explanation describing how the systems were established. This section should also contain a complete list of control coordinates, control traverse raw data, least squares analysis for both traverse and benchmarks, a separate listing of control point coordinates and witnesses for mapping and construction staking of the project. A complete Benchmark list with datum, station and offset, elevation, and description of each benchmark shall also be included. This information must be submitted in hardcopy and ASCII electronic file format on Compact Discs (CD's). Also, a sketch of the control traverse, showing any ties (government corners, property, alignment, etc.) shall be included in this section.
  - d. The Property section contains all information that is utilized regarding the real property affected by the project. It also includes any and all property ties necessary to establish the Right of Way and/or acquire property if required by the project. This may include copies of all **recorded** Land Corner Recordation Certificates for the government corners used or reestablished, recorded plats, recorded certified surveys, tax maps, tax descriptions, and adjacent/riparian owners, as well as surveyed coordinates.
  - e. The Mapping section must consist of electronic data only. The final planimetric mapping file must be submitted in .PDF format. Raw survey data is not required.
  - f. The Miscellaneous section contains any information not included in the previous sections. The project surveyor's report should specify any items included in this section.
14. Each category of survey must be packaged separately (i.e., Bridge surveys separate from Road surveys and Hydraulic surveys). All sheets in a portfolio must be marked with the control section and job number. CD's must be labeled with the control section, job number, data type and file names.
15. The Consultant representative shall record and submit typewritten minutes for all project related meetings to the MDOT Project Manager within two weeks of the meeting. The Consultant shall also distribute the minutes to all meeting attendees.
16. The MDOT Project Manager is the official contact for the Consultant. The Consultant must send a copy of all project correspondence to the MDOT Project Manager. The MDOT Project Manager shall be made aware of all communications regarding this project. Any

survey related questions, in regard to this project, should be directed to a Survey Consultant Coordinator or MDOT Region Surveyor.

At the completion of this survey for this project, all field survey notes, all electronic data, and all research records obtained for this project will be considered the property of MDOT and **must be sent to** the MDOT, Design Division, Supervising Land Surveyor, P.O. Box 30050, Lansing, MI 48909. Please use MDOT's Form 222(3/99) entitled "SURVEY NOTES: RECEIPT AND TRANSMITTAL" for all transmittals. A copy of this transmittal form must also be sent to the MDOT Project Manager for Design.

## **WORK RESTRICTIONS**

The Consultant must call the MDOT Region or TSC Traffic and Safety Engineer before beginning work to inform him of surveying activity in the area. The Consultant is advised to discuss Traffic Control scenarios with the Traffic and Safety Engineer prior to submitting a proposal.

Traffic shall be maintained by the Consultant throughout the project in accordance with Sections 812 and 922 of the Standard Specifications for Construction, 2003 edition, and any supplemental specifications. All traffic control devices shall conform to the current edition, as revised, of the Michigan Manual of Uniform Traffic Control Devices (MMUTCD).

The Consultant must use MDOT standard lane closure "maintaining traffic" typical for any and all lane closures and shoulder closures. Typical MDOT traffic control diagrams are available online at <http://www.mdot.state.mi.us/tands/plans.cfm>.

## **FIELD SURVEY**

The purpose of the field survey is to obtain all information and data required by the project design engineer, to leave control in the field for future construction staking, and to provide a sufficient history of the area to enable the MDOT Design Survey Unit to perform dependable surveys in the future. The Consultant surveyor must discuss the scope of this survey with the project design engineer before initiating any work on this project. Notes of this meeting and a detailed Survey Work Plan with an estimate of hours broken down by specific survey task must be submitted to the MDOT Project Manager and Survey Consultant Coordinator within two weeks of this meeting.

## **GOVERNMENT CORNERS**

Any PLSS corners within the project limits must be recovered or established and tied to the project coordinate system.

All PLSS corners must be recorded in accordance with PA 74 of 1970, as amended and all applicable administrative rules. A copy of each recorded Land Corner Recordation Certificate must be submitted to the MDOT Design Survey Office as part of the final report. All PLSS corners located in hard surface roads must be protected by a monument box, regardless of

impending construction. The Consultant shall provide to the Survey Project Manager a list of any affected Government or Property Controlling Corners in the detailed work plan for discussion or approval.

The Consultant surveyor must contact the County Remonumentation Representative prior to beginning work on the project to inform him of proposed corner perpetuation activities, and to obtain information pertinent to PLSS corners and/or property controlling corners affected by project construction.

## **FINAL REPORT: DELIVERABLES**

The final report for this project shall include the following:

1. In the first pocket of the first portfolio, MDOT's Form 222(3/99) entitled "SURVEY NOTES: RECEIPT AND TRANSMITTAL."
2. The project's Professional Surveyor's Report on company letterhead consisting of the following:
  - a. A comprehensive report, written and signed by the project's Professional Surveyor, of the work performed on this project.
  - b. The source and the methods used to establish the project horizontal coordinates, elevations, and the alignment(s) for this project.
  - c. A detailed explanation of anything discovered during the survey of this project that may create a problem for the designer or another surveyor.
3. Documentation of horizontal and vertical datum sources.
4. Least squares analysis for horizontal and vertical control.
5. Coordinate and witness lists for the horizontal alignment ties, government corners, traverse control points, and bench marks.
6. A sketch of the alignment(s) with reference points and angle of crossing (if appropriate), stationing, horizontal coordinates, curve data, and a station equation to existing stationing if different. **The alignment must be clearly noted as legal or best-fit.**
7. Control sketch with control points, government corners and alignment plotted.
8. All field survey notes, all electronic survey data files, all calculation sketches, and all research records obtained for this project. All electronic survey data files shall be submitted on Compact Discs only, specifically labeled. No paper copy of raw survey data is required.
9. Legible copies of all **recorded** Land Corner Recordation Certificates (with Liber and Page

number) filed or used for the performance of this survey, and for any PLSS corners, including Property Controlling Corners, which may be disturbed by construction.

10. It is the responsibility of the Consultant to insure that all electronic files submitted to MDOT conform to the required format and all documents are legible.
11. The Consultant must organize and label the various sections of the portfolios as required by the MDOT Design Surveys *Standards of Practice* dated April 1, 1998.
12. It is not necessary to submit hardcopy mapping data in the survey portfolio for a Consultant survey/Consultant design in the same authorization. Final planimetric map must be submitted in .PDF format.
13. It is desirable to limit paper and to include as much electronic data as possible on Compact Disc, including scanned items, to facilitate future electronic storage and transmission of survey data. **Duplicate CD's must be included in the portfolio, with one set labeled "Region Surveyor".**

**ATTACHMENT B**  
**CS 82112 – JN 75229C & CS 82111 - JN 45682C**  
**M-10 from Greenfield Road to Meyers Road**  
**City of Detroit, Wayne County**

**SCOPE OF WORK FOR MAINTAINING TRAFFIC**

The Consultant is to provide MDOT with a minimum of 2 different alternative approaches to maintaining traffic (including staging) for the work associated with this project. The alternative maintaining traffic plans shall include, but are not limited to:

1. Gather existing data for the project including but not limited to average daily traffic counts, speed limits, crash data, lane widths, etc.
2. Perform a crash analysis using data from the CRIS and/or TMS databases, MDOT will provide the consultant with a one-line listing of data. The crash analysis and recommendations must be in compliance with 3R/4R guidelines. Provide MDOT with viable solutions and recommendations based on the crash analysis.
3. Determine queue lengths and user delay costs for each alternative maintaining traffic plan.
4. Prepare a cost estimate of the maintaining traffic quantities for each maintaining traffic alternative.
5. Gather information in regards to local noise ordinances, local considerations, special events, detour routes, etc. that may impact the maintaining traffic plan and incorporate those findings into each alternative maintaining traffic plan.
6. Develop maintaining traffic typicals, diagrams, signing details, temporary pavement markings, signal modifications, cross sections for staging, etc. for each maintaining traffic alternative.
7. The consultant is to summarize and compare the maintaining traffic plan alternatives in regards to construction time and cost of implementation. This summary shall include both a written summary and a comparison chart with each alternative giving a description, advantages, disadvantages, project duration, lane reductions (example - the amount of days M-10 would be restricted to one-lane, two-lane, etc. - if applicable), and cost.
8. Develop maintaining traffic typicals, diagrams, signing details, temporary pavement markings, signal modifications, cross sections for staging, etc. for each maintaining traffic alternative.
9. The consultant is to schedule and attend all meetings related to maintaining traffic. The meetings shall be scheduled in accordance with the project manager's schedule.

**ATTACHMENT C**  
**CS 82112 - JN 75229C & CS 82111 – JN 45682C**  
**M-10 from Greenfield Road to Meyers Road**  
**City of Detroit**  
**Wayne County**

Attachment C left intentionally blank.



**ATTACHMENT D**  
**CS 82112 - JN 75229C & CS 82111 - JN 45682C**  
**M-10 from Greenfield Road to Meyers Road**

**City of Detroit**  
**Wayne County**

**UTILITY COORDINATION SCOPE OF WORK**

For the purpose of this scope “utility coordination” means the Consultant shall participate in all stages of the Department’s utility coordination process. It is the intent of this scope that the Consultant selected as a result of this solicitation employ qualified, competent, and experienced personnel to provide the services set forth herein.

The Consultant selected shall be capable of providing the following services pertaining to utility coordination work, including, but not limited to:

1. Identification of existing/proposed utility owners and their facilities.
2. Resolution of conflicts between utility facilities and proposed construction.
3. Documentation of utility company activities.
4. Evaluation and certification of utility relocation schedules for compatibility to the Department’s project schedule.

**GENERAL REQUIREMENTS**

The Consultant is responsible for taking the necessary steps to insure appropriate utility coordination for the project. The Consultant is expected to participate in all stages of the MDOT utility coordination process, including but not limited to: scope meetings, design meetings, pre-advertisement meetings, pre-construction meetings, field inspections, utility permit reviews, plan reviews and construction phase services. In addition, the Consultant shall provide the following services:

1. Perform subsurface utility engineering (SUE) according to the scope of work that is part of this contract (see Attachment B for details). SUE deliverables are to be included in the proposed schedule.
2. Schedule and conduct utility meetings, as necessary, to resolve conflicts between utility facilities and proposed construction. Moderate and record meeting minutes, distribute to all in attendance plus the appropriate MDOT Region/TSC Utilities/Permits Engineer and the MDOT Project Manager. The meetings, as a minimum will identify conflicts, develop utility relocation schemes, discuss possible design modifications, review the schedule of MDOT construction activities, and develop a coordinated utility activity schedule. Include resolution of all utility conflicts and utility coordination needs in the proposed project schedule.
3. Provide bi-weekly status reports to the appropriate MDOT Region/TSC Utilities/Permits Engineer, MDOT Project Manager and the MDOT Lansing Utilities-

Permits Office and any other appropriate personnel as directed by the MDOT Project Manager, Mark Sweeney. The report, at a minimum, should display the control section, project number, project location and description, report date, status of each utility and date information is expected back or when action is to be taken. Develop and maintain a status report (ie. Spreadsheet, log, etc.) regarding the project's utility status. Depending on the project, these status reports may be reduced to monthly, at the request of the Project Manager.

4. Conduct or participate in meetings convened for the purpose of utility betterments (ie. new water main and communication facilities, etc.). Develop corridor schemes and utility construction schedules.
5. Provide technical assistance to MDOT's Design Division and design Consultants regarding utility relocations and project impacts. Assure that all proposed utility relocation work, either private or municipal force account work, is compatible with the proposed project and meets MDOT and other applicable standards.
6. Review utility relocation plans for compatibility with the proposed MDOT project. Confirm that all necessary utility relocation permits are submitted to the appropriate MDOT Region/TSC Utilities/Permit Engineer for issuance. Follow-up with utility companies to ensure that their utility relocations are progressing and will not adversely affect the project's schedule.
7. Prepare a Notice to Bidders and any necessary, Utility Coordination Clauses. These need to be submitted to the appropriate MDOT Region/TSC Utilities/Permits Engineer by a deadline to be determined by the MDOT Project Manager.
8. The Consultant may be required to provide Design Services during the construction phase of this project, including utility alignment staking and inspection. If Construction Assistance is required, then a separate authorization for those services will be issued.

## **PLAN DISTRIBUTION AND UTILITY INFORMATION PROCURMENT**

The Consultant will be required to distribute plans on an as needed basis to the utility companies. At a minimum the following distributions shall take place:

1. The Consultant shall verify that base plans have been sent to utility companies within the project area. This will consist of an informational letter and two sets of preliminary plans (some companies may require four sets), describing the scope of the project. Initial contact should be made with all utility companies that may have facilities in the project area. Four to six weeks should be allowed for utility companies to respond back with one set of marked plans showing their facilities, copies of their "As Built" plans, or written confirmation that they have no facilities in the project area. This information will then be forwarded to the Design Project Manager.
2. Collect and compile utility company responses from each utility company. Follow up with non responsive utility companies to ensure a response is received. Establish design contacts and if different, construction contacts for the project. Review the plan note sheets and verify with the utility company that the utility company names, addresses, contacts and phone numbers are accurate.

3. Distribute Department plans at approximately 50 percent completion. These plans should have the utility locations plotted and provide sufficient detail for utility companies and the utility coordinator to determine conflicts (ie: storm sewer design). The Department's standard plan distribution letter, authorizing utility companies to begin preliminary engineering and also notifying the utility company of their responsibility to relocate facilities under Act 368, P.A. of 1925, needs to be included with this plan distribution.
4. Copies of any correspondence sent to any utility company should be sent to the appropriate MDOT Region/TSC Utilities/Permits Engineer, MDOT Project Manager and the MDOT Lansing Utilities-Permits Office and any other appropriate personnel unless otherwise directed.

## **PERMIT REVIEWS**

Review utility relocation plans and new permit applications for compatibility with the proposed MDOT project. Confirm that all necessary utility relocation permits are submitted to the appropriate MDOT Region/TSC Utilities/Permits Engineer for issuance. To ensure that utility relocations are progressing and will not adversely affect the project's schedule, follow up with the appropriate utility companies.

## **REIMBURSABLE UTILITY RELOCATIONS**

Ensure that eligible reimbursable utility relocations, under Federal-Aid Policy Guide 23 CFR 645A and 645B and MDOT Utility Accommodation Policy are identified. Confirm that the utility companies submit the necessary information (ie. Permit applications, property rights, estimates, etc.) as to meet the aforementioned guidelines to the appropriate MDOT Region/TSC Utilities/Permits Engineer for processing and authorization.

## **DESIGN ANALYSIS AND RECOMMENDATIONS**

When the Consultant has obtained all necessary utility information, the Consultant shall determine to what extent the proposed roadway and/or bridge improvements will impact the existing utilities. The Consultant shall prepare a report outlining avoidance alternates, required adjustments, relocations, and cost estimates to perform those relocations.

## **STAKING, PERMIT INSPECTION AND CONSTRUCTION PHASE SERVICES**

The Consultant may be requested to provide any needed alignment staking for utility relocations. Staking shall be consistent with the project's survey control. The Consultant will be responsible for the accuracy, per applicable survey standards, when performing survey work. The Consultant performing any surveys must be on the Department's pre-approved surveyors list.

The Consultant may be asked to oversee and inspect utility relocations. Reports of this activity and the Department's Permit Inspection Report (Form #2213) will need to be sent to the appropriate Region/TSC Utilities/Permits Engineer.

Construction phase services may be requested. This may include attending the preconstruction meeting and presenting the utility coordination work. It also may involve working with the Department's Resident Engineer and utility company to resolve utility conflicts discovered during construction. If Construction Assistance is required, then a separate authorization for those services will be issued.

## **CERTIFICATION**

This certification will include all necessary copies of correspondence and will be signed by a duly authorized representative of the firm. After certification, the project files will be forwarded to the appropriate MDOT Region/TSC Utilities/Permits Engineer. The Consultant will certify to the MDOT Region/TSC Utilities/Permits Engineer the following:

1. All utility work has been completed or that all arrangements have been made for it to be undertaken and completed as required for proper coordination with the projects construction schedule.
2. Plans were sent to all utility agencies, responses were received, and no utility relocation is required.

## **MDOT RESPONSIBILITIES**

1. The MDOT Region/TSC Utilities/Permits Engineer or appropriate representative will notify the Consultant when to proceed with work by issuance of a work authorization. Work authorizations shall identify the project's location, scope, and required "due dates" to complete the utility coordination.
2. Provide the Consultant, when appropriate, survey control to be used for any required surveying the Consultant may need to perform.
3. Provide a preliminary list of utility companies within the project limits. This list may not be 100% accurate and/or complete. The Consultant is responsible to identify all known and unknown utility facilities within the project limits.
4. Provide the Consultant with any appropriate Department form letters.
5. The Department shall have the authority to suspend the work, in full or in part, for such period or periods as may be deemed necessary due to conditions that are considered unfavorable work performance, or for the failure on the part of the Consultant to comply with any or all provisions of the contract. Such suspension shall be ordered in writing, giving in detail the reasons for the suspension.

**ATTACHMENT E**  
**CS 82112 - JN 75229C & 45682C**  
**M-10 from Greenfield Road to Meyers Road**  
**City of Detroit**  
**Wayne County**

**CRASH ANALYSIS REPORTS**

The Consultant shall provide MDOT with a Crash Analysis Report, which shall detail the safety performance of the project location (includes not only the mainline, but all ramps, major and minor intersections, and crossovers within the project limits), and provide detailed graphic depiction of countermeasures, and cost/benefit analysis for crash concentration locations.

The Crash Analysis Report shall, at a minimum, compare the project location features (mainline, ramps, major intersections, minor intersections and crossovers) to regional averages, identify crash concentration locations, examine crash concentration locations for crash patterns and provide countermeasures for correctable crash patterns. The Consultant shall combine a thorough review of computer-based crash records with field reviews of the roadway's characteristics (geometric and operational features shall be specifically noted), to identify crash concentration locations. The Consultant shall provide a Draft Crash Analysis Report and upon review and comment by MDOT, the Consultant shall make any changes identified and submit a Final Crash Analysis Report.

The Consultant shall at a minimum review and analyze the most recent three years of MDOT crash data. If there is a fatality within those three years, the Consultant shall review and analyze an additional 7 years of crash data. For the analysis, the Consultant shall stratify the data by location and the crash data shall also be aggregated by similar roadway segment characteristics. The Consultant shall quarry SEMCOG to determine regional crash averages which will provide a normative measure of comparison to aid in the identification of crash concentration locations.

The Consultant shall identify crash concentration locations and determine crash patterns. Based on the crash patterns identified for each crash concentration location the Consultant shall develop proposed crash countermeasures. The countermeasures shall be graphically depicted, to scale, with sufficient detail to determine the countermeasures impact to the existing roadway and the proposed roadway improvement.

The countermeasures may range from simple sign / marking / signal modifications up through substantial reconstruction. The Consultant shall present countermeasures stratified into short and long-term solutions. The Consultant shall provide a construction cost estimate for each countermeasure using MDOT Pay Items and shall clearly identify any Right-Of-Way impacts a countermeasure may have. The Consultant shall provide a full cost/benefit analysis for each countermeasure. The Consultant shall also evaluate the crash impacts on design exceptions sought.

**ATTACHMENT F**  
**CS 82112 - JN 75229C & 45682C**  
**M-10 from Greenfield Road to Meyers Road**  
**City of Detroit**  
**Wayne County**

**SCOPE OF WORK FOR DRAINAGE STUDY**

The Consultant is to conduct a site investigation of the drainage within the limits of the project. The purpose of this study is to determine where hydraulic analyses and/or surveys are required. If further hydraulic analyses and/or surveys are required, then MDOT will issue a separate authorization for those services.

**Work Steps:**

1. Prepare a typed report summarizing the drainage affected by the project. For every culvert carrying natural drainage within the MDOT Right-Of-Way, provide the following information:
  - a. Stream name
  - b. Exact location of the culvert, including Section, Town, Range, and Township
  - c. Size, type, and condition of culvert
  - d. Any evidence of scour or erosion
  - e. Any evidence that the structure is undersized
  - f. Any county drains
  - g. Photographs of the upstream face, downstream face, looking upstream, and looking downstream, as well as any drainage structures, buildings, or farmland that may affect or be affected by the culvert
  - h. Drainage area, including delineation on a USGS quadrangle map (or local contour map, if more up-to-date)
  - i. Type of work proposed, including existing and proposed lengths
2. The report must include any other effects on the drainage; for example, a raise in road grade or widening.
3. Submit the drainage study to the MDOT Project Manager for review and approval by the Design Engineer - Hydraulics/Hydrology.
4. Receive any items returned by the MDOT Project Manager as incomplete or deficient.
5. Make necessary changes and resubmit the incomplete items, including a written response to all comments.

**ATTACHMENT G**  
**CS 82112 - JN 75229C & CS 82111 – JN 45682C**  
**M-10 from Greenfield Road to Meyers Road**  
**City of Detroit**  
**Wayne County**

**CONSTRUCTION CRITICAL PATH NETWORKS**

**I. INTRODUCTION**

The Consultant is required to submit a Construction Critical Path Network at various points in the design process. Refer to the following:

P/PMS TASK 3580 - DEVELOP PRELIMINARY PLANS

P/PMS TASK 3830 - COMPLETE THE CONSTRUCTION ZONE TRAFFIC CONTROL PLAN

P/PMS TASK 3840 - DEVELOP FINAL PLANS AND SPECIFICATIONS

Construction Critical Path Networks are often needed to develop the progress schedule for a project. They are required on any project designated to include an Incentive/Disincentive or Special Liquidated Damages clause. Construction Critical Path Networks are also recommended for projects with the following characteristics:

1. New construction.
2. Major reconstruction or rehabilitation on an existing roadway that will severely disrupt traffic.
3. Unique or experimental work.
4. More than one construction season.
5. Complex staging (multiple stages with traffic shifts).

As noted in MDOT's Construction and Technology Instructional Memorandum 1997-7, Progress Schedule Determinations/Critical Path Rates,

*preparation of a Critical Path is a requirement on all Consultant-designed projects, regardless of the project type or complexity*

The MDOT Resident Engineer assigned to the project should be consulted when developing Construction Critical Path Networks.

MDOT requires the precedence diagramming method. The Consultant will submit this network in MPX version 4.0.

## II. NETWORK DEVELOPMENT

The network will be defined using the following steps.

1. Activity definition.
2. Activity sequencing.
3. Duration estimation.
4. Schedule development.

### 1. ACTIVITY DEFINITION

The Consultant will define the specific activities in enough detail so that the proper objectives will be met. The Consultant must identify assumptions (those factors considered true, real or certain). Supporting detail for the activities should be documented and organized as needed to simplify the review of the activities by MDOT personnel.

The Construction Critical Path Network must start with the **Letting Date** as the first activity and terminate with the **End of Project** as the finish activity.

A sufficient number of activities will be required with sufficient detail so that the controlling construction operation(s) may be identified. Notation on each activity shall include a brief work description and activity time duration.

### 2. ACTIVITY SEQUENCING

Activity sequencing involves identifying and documenting interactivity dependencies. The Consultant must sequence activities accurately to support later development of a realistic and achievable construction schedule. Two types of dependencies should be considered. Mandatory dependencies are inherent in the nature of the work being done, such as construction sequencing. Discretionary dependencies are based on a knowledge of the work to be done. Constraints are used to show how the activities relate to each. The Consultant must include documentation supporting all discretionary dependencies used in the project. All activities must lead to another activity. Only Start to Start, Finish to Finish and Finish to Start relationships will be allowed. All logic shall show how the given activity is dependent on its preceding activities.

### 3. DURATION ESTIMATION

After the Consultant has sequenced the activities, the Consultant should determine the activity duration. Activity duration estimating involves assessing the number of work periods likely to be needed to accomplish each activity. Duration (working days): No activity will have a duration greater than 20 working days unless approved by the Engineer. Activities that will be allowed to exceed 20 working days include, but are not limited to, working drawing approvals or other activities not under the control of the Contractor. If requested by the Engineer, the Consultant shall explain the reasonableness



of activity time durations. The approved MDOT production rates will be used in estimating activity duration. These are available in the Supplemental Information section of this attachment. The Consultant must document and submit all assumptions made during the duration estimation to MDOT.

#### **4. SCHEDULE DEVELOPMENT**

The activity sequencing, duration estimations and the calendars are combined to create the construction schedule. During the development of the schedule the Consultant will verify:

1. The required schedule to build the project.
2. The constructability of the project.
3. If the maintaining traffic scheme will work.
4. If seasonal limitations will affect the construction.
5. Any other project specific considerations.

The MDOT Calendars will be used by the Consultant in developing the network. The calendars are based on a 4, 5 or 6 day work week. The MDOT Calendars are included in the Supplemental Information section of this attachment.

At this point there should be no negative float in the network. If there is, there is an error in the network and the error must be corrected before network submittal.

All summary tasks shall be removed prior to submittal to MDOT Project Manager

### **III. DELIVERABLES**

After this final step the design Consultant will submit the finished CPM schedule to MDOT

#### **1. Documents**

- A. 11" x 17" plot of the network. The critical path shall be clearly identified on the plot. A larger plot may be required for complex networks.
- B. Work Day / Completion Date Determination Worksheet.
- C. List of any other assumptions or controlling factors used in creating the network. For example, permit or maintaining traffic restrictions.

#### **2. Electronic Format**

This section sets the requirements for the electronic submittal of the Consultant's Construction Network. All networks shall be submitted on a 3.5 inch floppy disk (or via E-mail) using one of the following formats:

- A. **Standard Electronic Media Format:** This is a standard ASCII text file containing the data elements below, in the order specified. This file can be created using any text editor or word processing application ( i.e., MS-Word, WordPerfect, Notepad, Write) but must be saved as an ASCII file.

The **first line** will provide a descriptive header describing the submittal and containing:

Control Section  
Job Number  
Route  
Consultant name  
Date of Submittal

The next line will be **blank**, followed by multiple data lines.

Each **data line** will contain one record pertaining to one task of the job. Separate data fields by a comma. Fields within each task line are as follows:

(Note that the term "task" is synonymous with "activity." Leave fields that are not required blank)

- (1) Task # (Job # followed by a hyphen followed by this task's unique 4 digit task number. This is the Preceding Event Activity Code)
- (2) Description of Task, Milestone or Hammock, blank if this record is a constraint
- (3) Calendar (see attached list)
- (4) Duration of task, blank for constraints
- (5) Task # of the next task (Succeeding Event) - leave blank if this record is not a constraint or hammock
- (6) Type of constraint (FS, SS, FF) - leave blank if this record is not a constraint.
- (7) Delay, if required
- (8) Original "Baseline" Start Date
- (9) Original "Baseline" Finish Date
- (10) Current (forecast) Start Date (early start)
- (11) Current (forecast) Finish Date (early finish)
- (12) Estimated completion date (if different from early start + current duration)
- (13) Late Start Date
- (14) Late Finish Date
- (15) Actual Start Date
- (16) Actual Finish Date

Example - each line contains the following:

Task # (preceding event), Description, Calendar, Duration, Next Task # (succeeding event), Constraint Type, Delay, Baseline Start, Baseline Finish, Early Start, Early Finish, Estimated Completion Date, Late Start, Late Finish, Actual Start, Actual Finish, Total Float.

- B. **Primavera Project Planner(P3) 2.0 Export Procedure:** Users who have Primavera Project Planner(P3) version 2.0 can automatically create a export file by following the export procedure below. **Users having an older version of Primavera may use the applications export feature only if they are able to include all the data elements listed in the version 2.0 format.**

1. Choose Tools, Project Utilities, **EXPORT**
2. Click **ADD**, then click **OK** to accept the next sequential ID number, or type a unique number to identify the specifications and click **OK**
3. Enter a description for the specification in the Title field
4. Specify data items to export

#### **Activities**

- Select **Contents of List**
- Use the Description column to specify which data items to export
- To add items, click the right mouse button in the Description column and choose from the list. Suggested Items include: **Activity ID, Activity Description, Actual Start, Actual Finish, Calendar ID, Early Start, Early Finish, Late Start, Late Finish, Original Duration.**
- Select **All Current, All Target, or All Target2**
- Set Description Length to 48

**OR**

#### **Constraints**

- Select **Successor relationships** - Choose this option to export Activity IDs and their corresponding successors only. Lags and relationship types will also be displayed in this output file.

5. Click **FORMAT** in Export Dialog Box
6. In the Output file section, enter a new name and path (ex. A:\actexp or A:\conexp). Do not include a file extension.
7. In the type field, click the minimize button and choose the [**PRN**] - **ASCII** file format for the output file.
8. Select **CALENDAR** for Date Format
9. Set ASCII Output Field Separation to **1** and Blank column width to **0**
10. Click **RUN**
11. In the Output Options dialog box, click on **OK**

**NOTE: A COMPLETED FILE EXPORT WILL CONSIST OF 2 EXPORT FILES (ACTIVITIES & CONSTRAINTS)**

- C. **Microsoft Project Export Procedure:** Users of Microsoft Project Version 4.0 and above can create a Microsoft Project Exchange (MPX) file by following the procedure below.

1. Choose File, Save As from the main menu
2. In the Save File as Type box Select **MPX 4.0**
3. On the drive box select a: or whichever drive is the 3.5" Floppy drive
4. Click on **OK**

This saves the file in MPX format.

- D. **Primavera Sure Track:** Users of Sure Track Version 2.0 and above can create a Microsoft Project Exchange (MPX) file by following the procedure below.

1. Choose File, Save As from the main menu
2. In the filename box input a filename
3. In the Save File as Type box Select **MPX**
4. On the drive box select a: or whichever drive is the 3.5" Floppy drive
5. Click on **OK**

This saves the file in MPX format

- E. **Scitor Project Scheduler 7 Export Procedure:** Users of Scitor Project Scheduler Version 7 and above can create a Microsoft Project Exchange (MPX) file by following the procedure below.

1. Choose File, Save As from the main menu
2. In filename box select a filename
3. In the Save File as Type box Select **MPX**
4. On the drive box select a: or whichever drive is the 3.5" Floppy drive
5. Click on **OK**

This saves the file in MPX format

- F. **Export Files with Other Scheduling Applications:** Most scheduling packages have export functions similar to those described above. If the Consultant chooses to use packages with export capabilities, they shall include all items listed in the Standard Media Format in a text or ASCII type file.

#### IV. SUPPLEMENTAL INFORMATION

##### A. MDOT CRITICAL PATH-CONSTRUCTION TIME ESTIMATES

###### Drainage

###### Cross Culverts

Rural Highways	44 yd./day
Expressways	55 yd./day
Large Headwalls	5 days/unit
Slab or Box Culverts	5 days/pour
Plowed in Edge Drain (production type project)	4921 yd./day
Open Graded Underdrain (production type project)	1312 yd./day

###### Sewers

0m-5m(up to 60 in. (1500mm))	44 yd./day
0m-5m(over 60 in. (1500mm))	27 yd./day
5m-over(up to 60 in. (1500mm))	27 yd./day
5m-over(over 60 in. (1500mm))	22 yd./day
Jacked-in-place	14 yd./day
including excavation pit & set up	min. 5 days
Tunnels	
hand mining	9 yd./day
machine mining	22 yd./day
including excavation pit & set up	min. 5 days

###### Manholes

3 units/day

###### Catch Basin

4 units/day

###### Utilities

Water Main(up to 16 in. (400mm))	109 yd./day
Flushing, Testing & Chlorination	4 days
Water Main(20 in. (500mm) – 40 in. (1050mm))	27 yd./day
Flushing, Testing & Chlorination	5 days
Order & Deliver 24 in. (600 mm) HP Water Main	50 days/order
Gas Lines	109 yd./day

###### Earthwork and Grading

###### Embankment(CIP)

**Metro Exp**  
1962 yd.<sup>3</sup>/day

**Rural**  
6932 yd.<sup>3</sup>/day

###### Excavation and/or Embankment(Freeway)

1962 yd.<sup>3</sup>/day

12033

		yd. <sup>3</sup> /day
Excavation and/or Embankment(Reconstruction)	981 yd. <sup>3</sup> /day	4970 yd. <sup>3</sup> /day
Embankment(Lightweight Fill)	392 yd. <sup>3</sup> /day	785 yd. <sup>3</sup> /day
Muck(Excavated Waste & Backfill)	1962 yd. <sup>3</sup> /day	
Excavation(Widening)	656 yd./day	
Grading(G & DS)	820 yd./day	
Subbase and Selected Subbase(up to 8 yd. (7.4m))	656 yd./day	
Subbase and Selected Subbase(8 yd. (7.4 m) & over)	492 yd./day	
Subgrade Undercut & Backfill	1962 yd. <sup>3</sup> /day	
Subbase & Open-Graded Drainage Course	492 yd./day	

### **Surfacing**

Concrete Pavement (8 ft. (7.3m))	492 yd./day	
Including Forming & Curing	min. 7 days	
Bituminous Pavement (8 ft. (7.3m))	1312 yd./day/course	
Concrete Ramps(5.6 yd. (4.9m))	328 yd./day	
Including Forming & Curing	min. 7 days	
Curb(1 side)	820 yd./day	
Concrete Shoulder-Median	1435 yd. <sup>2</sup> /day	
Bituminous Shoulders(1 side per course)	820 yd./day	
Sidewalk	215 yd. <sup>2</sup> /day	
Sidewalk(Patching)	78 yd. <sup>2</sup> /day	

### **Structures**

Sheeting(Shallow)	33 yd./day	
General Excavation at Bridge Site	981 yd. <sup>3</sup> /day	
Excavation for Substructure(Footings)	1 unit/day	
Piles(12m)	15 piles/day	
Substructure(Piers & Abutments)	5 days/unit	

### **Order and Delivery of Beams**

Plate Girders	100-120 days/order
Rolled Beams	90-120 days/order
Concrete Beams	50 days/order

Erection of Structural Steel	3 days/span
Bridge Decks	
Form & Place Reinforcement(66 yd. (60m) Structure)	15 days
Pour Deck Slab(1 1/5 days/pour)	2 days/span
Cure	14 days
2 Course Bridge Decks	
Add 9 days for Second Course Latex	
Add 12 days for Second Course Low Slump	
Sidewalks and Railings	
Sidewalks and Parapets	5 days/span
Slip Formed Barriers	2 days/span
Clean Up	10 days
Pedestrian Fencing	
Shop Plan Approval & Fabrication	1-2 months
Erection	1 week/bridge
Rip Rap Placement	
Bucket Dumped	504 yd. <sup>3</sup> /day
Bucket Dumped and Hand Finished	171 - 684 yd. <sup>3</sup> /day
<b>Retaining Walls</b>	1 Panel/day min. 10 days
<b>Railroad Structures</b>	
Grade Temporary Runaround	981 yd. <sup>3</sup> /day
Ballast, Ties & Track	55 yd./day
Place Deck Plates	5 days/span
Waterproof, Shotcrete & Mastic	5 days/span
<b>Railroad Crossing Reconstruction</b> (depends on whether concrete base is involved)	10-15 work days
<b>Temporary Railroad Structures</b>	
Order & Deliver Steel	55 days/order
Erect Steel	1 day/span
Ties and Track	3 days/span
<b>Pumphouse</b>	
Structure	30 days/structure
Order & Deliver Electrical & Mechanical Equipment	90 days

Install Electrical & Mechanical Equipment	30 days
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**Miscellaneous**

Removing Old Pavement	66 yd./day
Removing Old Pavement for Recycling(8 yd. (7.3m))	492 yd./day
Crushing Old Concrete for 6A or OGDC	1488 tons/day
Removing Trees(Urban)	15 units/day
Removing Trees(Rural)	30 units/day
Removing Concrete Pavement	538 yd. <sup>2</sup> /day
Removing Sidewalk	299 yd. <sup>2</sup> /day
Removing Curb & Gutter	492 yd./day
Removing Bituminous Surface	1914 yd. <sup>2</sup> /day
Conditioning Aggregate	984 yd./day
Bituminous Base Stabilizing	2990 yd. <sup>2</sup> /day
Ditching	656 yd./day
Trenching for Shoulders	820 yd./day
Station Grading	667 yd./day
Clearing	9568 yd. <sup>2</sup> /day
Restoration(Topsoil, Seeding, Fertilizer & Mulch)	1973 yd. <sup>2</sup> /day
Sodding	2512 yd. <sup>2</sup> /day
Seeding	47840 yd. <sup>2</sup> /day
Guard Rail	252 yd./day
Fence(Woven Wire)	394 yd./day
Fence(Chain Link)	164 yd./day
Clean Up	656 yd./day

Concrete Median Barrier	328 yd./day
Cure	min. 7 days
Reroute Traffic(Add 4 days if 1st item)	1 day/move
Concrete Glare Screen	492 yd./day
Light Foundations	6 units/day
Order & Delivery	6-8 week/order
Remove Railing & Replace with Barrier(1 or 2 decks at a time)	4 days/side
Longitudinal Joint Repair	1750 yd./day
Crack Sealing	5249 yd./day
Joint and Crack Sealing	547 yd./day
Repairing Pavement Joints - Detail 7 or 8	219 yd./day



Seal Coat	6999 lane yd./day
Diamond Grinding/Profile Texturing Concrete	3947 yd. <sup>2</sup> /day
Rest Area Building	
Order Material	3 months
Construct Building	9 months
Tower Lights	
Order and Deliver Towers	100 days
Weigh-In-Motion	
Order and Deliver Materials	1 month-6weeks
O & D with Installation	3 months
Raised Pavement Markers	300 each/day
Attenuators	2 each/day
Shoulder Corrugations, Ground or Cut	5 - 6 mi./side/day
Aggregate Base	3468 yd. <sup>2</sup> /day
Aggregate Shoulders	458 yd. <sup>3</sup> /day
Freeway Signing - 3# Post Type	50 signs/day
<b>Concrete Joint Repair</b> (High Production- Projects with > 1000 patches)	
Average(2 yd. (1.8m))	50 patches/day
Large(>2 yd. (1.8m))	598 yd. <sup>2</sup> /day
<b>Bridge Painting</b>	108 yd. <sup>2</sup> /day
<b>Pin and Hanger Replacement</b>	3 beams/day
Order Pin & Hanger	60 days
<b>Bridge Repair</b>	
Scarifying(Including Clean up)	11960 yd. <sup>2</sup> /day
Joint Removal(Including Clean up)	4 yd./day
Forming & Placement	3.8 yd./day
Hydro-Demolishing	328 yd./day
Barrier Removal	16 yd./day
Placement	49 yd./day
Hand Chipping (Other than Deck)	0.31 yd. <sup>3</sup> /person/day
Shoulder Corrugations, Ground or Cut	5 - 6 mi./side/day
Casting Latex Overlay	273 yd./day
Curing Overlay	
Regular	4 days

High Early	1 day
Thrie Beam Retrofit	33 yd./day
Beam End Repairs	
Welded Repairs	.75 days/repair
Bolted Repairs	.50 days/repair
Bolted Stiffeners (Pair)	.25 days/repair
Grind Beam Ends	.25 days/repair
Welded Stiffeners (Pair)	.25 days/repair
H-Pedestal Repairs:	
Welded Repair	.50 days/each
Replacement	1 day/each
Deck Removal	281 yd. <sup>2</sup> /day

### **Surfacing-Bituminous**

Metro-Primary(<(19800 tons (18000mtons))	
Paving	594 tons/day
Joints	164 yd./day
Cold Milling	4066 yd. <sup>2</sup> /day
Aggregate Shoulders	990 tons/day
Metro Primary(>(19800 tons (18000mtons))	
Paving	594 tons/day
Joints	219 yd./day
Cold Milling	8970 yd. <sup>2</sup> /day
Metro Interstate(>(19800 tons (18000mtons))	
Paving	1210 tons/day
Joints	394 yd./day
Aggregate Shoulders	990 tons/day
Urban Primary(<(19800 tons (18000mtons))	
Paving	704 tons/day
Joints	109 yd./day
Cold Milling	2033 yd. <sup>2</sup> /day
Rubbilizing	2033 yd. <sup>2</sup> /day
Aggregate Shoulders	495 tons/day
Urban Primary(>(19800 tons (18000mtons))	
Paving	1100 tons/day
Joints	131 yd./day
Cold Milling	2033 yd. <sup>2</sup> /day
Aggregate Shoulders	550 tons/day
Urban Interstate(>(19800 tons (18000mtons))	

Paving	1320 tons/day
Joints	241 yd./day
Cold Milling	2033 yd. <sup>2</sup> /day
Rubblizing	6937 yd. <sup>2</sup> /day
Aggregate Shoulders	704 tons/day
Rural Primary(<(19800 tons (18000mtons))	
Paving	704 tons/day
Joints	131 yd./day
Cold Milling	649 tons/day
Crush & Shape	11960 yd. <sup>2</sup> /day
Aggregate Shoulders	704 tons/day
Rural Primary(>(19800 tons (18000mtons))	
Paving	1210 tons/day
Joints	164 yd./day
Cold Milling	880 tons/day
Crush & Shape	11960 yd. <sup>2</sup> /day
Rural Interstate(>(19800 tons (18000mtons))	
Paving	1411 tons/day
Joints	240 yd./day

## B. WORKSHEET

### WORK DAY/COMPLETION DATE DETERMINATION

CS: \_\_\_\_\_

JN:

DESCRIPTION OF WORK: \_\_\_\_\_

## MAJOR WORK ITEM

## PRODUCTION QUANTITY                  RATE

ESTIMATED  
TIME

[illegible]

TOTAL ESTIMATED TIME:

COMPLETION DATE: \_\_\_\_\_ (Calendar Days or Work Days)

COMMENTS:

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### C. MDOT CALENDARS

The following are the MDOT 4, 5 and 6 day calendars:

CALENDAR	DESCRIPTION	START	FINISH
1	Std - Apr 16 - Nov 15 - 4 day	APR 16	NOV 15
2	LP - Bit Stab - 4 day	MAY 15	OCT 15
3	UP - Bit Stab - 4 day	JUN 01	OCT 01
4	LP S of M-46 - Bit Pave - 4 day	MAY 05	NOV 15
5	LP N of M-46 - Bit Pave - 4 day	MAY 15	NOV 01
6	UP - Bit Pave - 4 day	JUN 01	OCT 15
7	LP - Bit Seal Coat - 4 day	JUN 01	SEP 15
8	UP - Bit Seal Coat - 4 day	JUN 15	SEP 01
9	Tree Planting - Deciduous - 4 day	MAR 01 OCT 01	MAY 15 NOV 15
10	Tree Planting - Evergreen - 4 day	MAR 01	JUN 01
11	South LP - Restoration - 4 day	MAY 01	OCT 10
12	North LP - Restoration - 4 day	MAY 01	OCT 01
13	UP - Restoration - 4 day	MAY 01	SEP 20
14	Full Year - Winter Work - 4 day	JAN 01	DEC 31
21	Std - Apr 16 - Nov 15 - 5 day	APR 16	NOV 15
22	LP - Bit Stab - 5 day	MAY 15	OCT 15
23	UP - Bit Stab - 5 day	JUN 01	OCT 01
24	LP S of M-46 - Bit Pave - 5 day	MAY 05	NOV 15
25	LP N of M-46 - Bit Pave - 5 day	MAY 15	NOV 01
26	UP - Bit Pave - 5 day	JUN 01	OCT 15
27	LP - Bit Seal Coat - 5 day	JUN 01	SEP 15
28	UP - Bit Seal Coat - 5 day	JUN 15	SEP 01
29	Tree Planting - Deciduous - 5 day	MAR 01 OCT 01	MAY 01 NOV 15
30	Tree Planting - Evergreen - 5 day	MAR 01	JUN 01
31	South LP - Restoration - 5 day	MAY 01	OCT 10

32	North LP - Restoration - 5 day	MAY 01	OCT 01
33	UP - Restoration - 5 day	MAY 01	SEP 20
34	Full Year – Winter Work - 5 day	JAN 01	DEC 31
35	Full Year - Expedited - 6 day	JAN 01	DEC 31

**ATTACHMENT H**  
**CS 82112 - JN 75229C & CS 82111 – JN 45682C**  
**M-10 from Greenfield Road to Meyers Road**  
**City of Detroit**  
**Wayne County**

**MONTHLY PROGRESS REPORTS**

The first two pages of this attachment are the necessary layout of the Monthly progress reports and the last three pages are a completed example.

**Control Section 00000**  
**Job Number 00000C**  
**Structure Number S00**  
**Date 00/00/00**

**MONTHLY PROGRESS REPORT**

- A. Work accomplished during the previous month.
- B. Anticipated work items for the upcoming month.
- C. Real or anticipated problems on the project.
- D. Update of previously approved detailed project schedule (attached), including explanations for any delays or changes.
- E. Items needed from MDOT.
- F. Copy of Verbal Contact Records for the period (attached).

**Structure Number – Control Section – Job Number**  
**Route, Location Description**  
Design Schedule as of 00/00/00

**LIST TASKS, SUBMITTALS, APPROVALS AND MEETINGS AS OUTLINED IN SCOPE OF DESIGN SERVICES AS NEEDED. THIS LIST IS JUST AN EXAMPLE.**

Original Authorized Start Date	Original Authorized Finish Date	(Anticipated) or <b>Actual</b> Start Dates	(Anticipated) or <b>Actual</b> Finish Dates	Task	Task Description
00/00/00	<b>00/00/00</b>	00/00/00	<b>00/00/00</b>	??	Initial project meeting.
00/00/00	<b>00/00/00</b>	00/00/00	<b>00/00/00</b>	3330	Conduct Design Survey
00/00/00	<b>00/00/00</b>	00/00/00	<b>00/00/00</b>	3360	Prepare Base Plans
00/00/00	<b>00/00/00</b>	00/00/00	<b>00/00/00</b>		Submit Base Plans
00/00/00	<b>00/00/00</b>	00/00/00	<b>00/00/00</b>	3580	Develop Preliminary Plans
00/00/00	<b>00/00/00</b>	00/00/00	<b>00/00/00</b>	3390	Develop Construction Zone Traffic Control Concepts
00/00/00	<b>00/00/00</b>	00/00/00	<b>00/00/00</b>	3540	Develop Construction Zone Traffic Control Plan
00/00/00	<b>00/00/00</b>	00/00/00	<b>00/00/00</b>	3550	Develop Preliminary Traffic Operations Plan
00/00/00	<b>00/00/00</b>	00/00/00	<b>00/00/00</b>	3351	Review & Submit of Preliminary Right-Of-Way Plans
00/00/00	<b>00/00/00</b>	00/00/00	<b>00/00/00</b>		Submittal of The Plan Review Package
00/00/00	<b>00/00/00</b>	00/00/00	<b>00/00/00</b>		Completion of The Plan Review Meeting
00/00/00	<b>00/00/00</b>	00/00/00	<b>00/00/00</b>	3840	Develop Final Plans and Specs
00/00/00	<b>00/00/00</b>	00/00/00	<b>00/00/00</b>		Submittal of final plans/proposal package to MDOT for final review
00/00/00	<b>00/00/00</b>	00/00/00	<b>00/00/00</b>	3870	Omissions/Errors Check (OEC) Meeting
00/00/00	<b>00/00/00</b>	00/00/00	<b>00/00/00</b>		Consultant's Plan Completion: Final Construction Plan/Proposal Package with recommendations Incorporated to MDOT (two weeks After OEC Meeting)
00/00/00	<b>00/00/00</b>	00/00/00	<b>00/00/00</b>		Final Deliverables to MDOT



### **MONTHLY PROGRESS REPORT**

- A. Work accomplished during the previous month.
  - 1. During the last month we completed the Final Right of Way plans and submitted them to Thomas Nelson, Jr. on 05/01/99.
- B. Anticipated work items for the upcoming month.
  - 1. Submit the Preliminary Plans and related material on 03/11/99.
  - 2. Attend the meeting regarding the Ameritech lines on the bridge, scheduled for 03/12/99.
- C. Real or anticipated problems on the project.
  - 1. We foresee no problems at this time.
- D. Update of previously approved detailed project schedule (attached), including explanations for any delays or changes.
  - 1. The design is falling behind schedule because we had problems resolving the geometries of the ramps in relation to the bridge. The Preliminary Plan submittal will be the only task affected by this delay because we will make up the lost time prior to submitting the Final Plans and Specifications.
- E. Items needed from MDOT.
  - 1. Prior to final Plan submittal we will need the latest Special provision and Supplemental Specification checklist.
- F. Copy of Verbal Contact Records for the period (attached).
  - 1. Discussed bridge and ramp geometries with Tom Myers of M\$DOT Traffic and Safety Division on 07-24-95.

**SN: S02 - CS: 12345 - JN: 11111C**  
**M-111, from There Village Limits to north of That Road**  
Design Schedule as of 07/31/95

Original Authorized Start Date	Original Authorized Finish Date	(Anticipated) or <b>Actual</b> Start Dates	(Anticipated) or <b>Actual</b> Finish Dates	Task	Task Description
01/12/95	01/12/95	<b>01/12/95</b>	<b>01/12/95</b>	??	Initial project meeting.
01/29/95	01/29/95	<b>01/30/95</b>	<b>01/30/95</b>	3330	Conduct Design Survey.
02/17/95	04/10/95	<b>02/17/95</b>	<b>04/20/95</b>	3360	Prepare Base Plans.
02/29/95	02/29/95	<b>02/29/95</b>	<b>02/29/95</b>	3390	Develop the Construction Zone Traffic Control Concepts
03/12/95	03/13/95	<b>03/12/95</b>	(03/30/95)	3540	Develop Construction Zone Traffic Control Plan
03/20/95	03/19/95	<b>03/25/95</b>	(03/30/95)	3551	Develop/Review Preliminary Traffic Signal Plan
07/01/95	07/01/95	(07/01/95)	(07/01/95)	3590	The Plan Review Meeting
07/11/95	08/11/95	(07/11/95)	(08/11/95)	3821	Complete/Review Traffic Signal Plan
09/15/95	09/15/95	(09/15/95)	(09/15/95)	3830	Complete Construction Zone Traffic Control Plan.
09/16/95	09/16/95	(09/16/95)	(09/16/95)	3840	Develop Final Plans and Specifications
09/25/95	09/23/95	(09/25/95)	(09/25/95)	3870	Omissions/Errors Check (OEC) Meeting

## **VERBAL CONTACT RECORD**

**Control Section** 12345

**Job Number** 11111C

**Structure Number** S02

**Date** 07/31/95

Joe Engineer talked to Tom Myers and decided to use a 0.05'/ft super on ramp A leading into the bridge.

**P/PMS TASK - INDEX - VERSION 2** rev 2  
ISSUED 9/29/2000

<b>P/PMS TASK</b>	<b>CURRENT DATE</b>	<b>LATEST REVISION DATE</b>
3120 - CONDUCT STRUCTURE DECK CONDITION SURVEY	07/29/99	
3330 - CONDUCT DESIGN SURVEY	07/29/99	
3340 - CONDUCT STRUCTURE SURVEY	07/29/99	
3350 - CONDUCT HYDRAULICS SURVEY	07/29/99	
3360 - PREPARE BASE PLANS	06/22/99	
3361 - REVIEW AND SUBMIT PRELIMINARY RIGHT OF WAY (PROW) PLANS	07/16/99	
3370 - PREPARE STRUCTURE STUDY	06/16/99	
3380 - REVIEW BASE PLANS	06/29/99	
3390 - DEVELOP THE CONSTRUCTION ZONE TRAFFIC CONTROL CONCEPTS	07/16/99	
3510 - PERFORM ROADWAY GEOTECHNICAL INVESTIGATION	07/29/99	
3520 - CONDUCT HYDROLOGIC, HYDRAULIC AND SCOUR ANALYSES	08/29/00	revised per P. Schriener
3530 - CONDUCT FOUNDATION STRUCTURE INVESTIGATION	07/16/99	
3540 - DEVELOP CONSTRUCTION ZONE TRAFFIC CONTROL PLAN	07/16/99	
3551 - DEVELOP/REVIEW PRELIMINARY TRAFFIC SIGNALS PLAN	07/16/99	added to index 1/5/2000
3552 - DEVELOP PRELIMINARY PERMANENT PAVEMENT MARKING PLAN	07/16/99	
3553 - DEVELOP PRELIMINARY NON - FREEWAY SIGNING PLAN	07/16/99	
3554 - DEVELOP PRELIMINARY FREEWAY SIGNING PLAN	07/16/99	
3570 - PREPARE PRELIMINARY STRUCTURE PLANS	07/16/99	
3580 - DEVELOP PRELIMINARY PLANS	06/30/99	
3581 - FINAL RIGHT-OF-WAY PLANS	07/16/99	
3590 - REVIEW PRELIMINARY PLANS	06/29/99	
3670 - DEVELOP MUNICIPAL UTILITY PLANS	06/30/99	
3675 - DEVELOP ELECTRICAL PLANS	07/01/99	

<b>P/PMS TASK</b>	<b>CURRENT DATE</b>	<b>LATEST REVISION DATE</b>
<b>3710 - DEVELOP REQUIRED MITIGATION (FOR INFORMATION ONLY, THIS IS NOT A CONSULTANT TASK)</b>	<b>07/16/99</b>	
<b>3720 - SUBMIT ENVIRONMENTAL PERMIT APPLICATIONS (FOR INFORMATION ONLY, THIS IS NOT A CONSULTANT TASK)</b>	<b>07/16/99</b>	
<b>3821 - COMPLETE/REVIEW TRAFFIC SIGNAL PLANS</b>	<b>07/16/99</b>	
<b>3822 - COMPLETE PERMANENT PAVEMENT MARKING PLAN</b>	<b>07/16/99</b>	
<b>3823 - COMPLETE NON-FREEWAY SIGNING PLAN</b>	<b>07/16/99</b>	
<b>3824 - COMPLETE FREEWAY SIGNING PLAN</b>	<b>07/16/99</b>	
<b>3830 - COMPLETE CONSTRUCTION ZONE TRAFFIC CONTROL PLAN</b>	<b>06/22/99</b>	
<b>3840 - DEVELOP FINAL PLANS AND SPECIFICATIONS</b>	<b>07/02/99</b>	
<b>3850 - DEVELOP STRUCTURE FINAL PLANS AND SPECIFICATIONS</b>	<b>07/29/99</b>	
<b>3870 - HOLD OMISSIONS/ERRORS CHECK (OEC) MEETING</b>	<b>07/13/99</b>	
<b>4120 - OBTAIN PRELIMINARY TITLE COMMITMENTS</b>	<b>06/29/99</b>	
<b>4130 - PREPARE MARKED FINAL R.O.W. PLANS</b>	<b>06/29/99</b>	
<b>4140 - PREPARE PROPERTY LEGAL INSTRUMENTS</b>	<b>06/29/99</b>	
<b>5010 - CONSTRUCTION PHASE ENGINEERING ASSISTANCE</b>	<b>07/29/99</b>	

